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Surgical Menopause: Are we Pushing Women Towards the Menace of Accelerated Aging and Diseases?

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ABSTRACT

It is a routine practice among gynecologists and general practitioners to recommend hysterectomies for benign gynecological diseases. This article is challenging this practice. **i)** Natural menopause: The reproductive life is divided into 5 stages showing the transition of reproductive function. Discussed the stages of normal reproductive aging in women based on (STRAW +10) 2014. The average age of Menopause is 51 years. Menopausal transitional symptoms occur few years before final natural menopause as changes in the pattern of menstrual cycle, vasomotor hot flushes, night sweats, sleep disturbances, psychological and mental disturbances, somatic symptoms headache, dizziness, palpitations **ii)** Surgical Menopause: Surgical menopause causes severe symptoms due to the sudden fall of estrogen, progesterone, and ovarian androgen. Though ovarian failure develops in 2-5 years after surgery hormone deficiency occurs immediately and symptoms can occur as early as 24-48 hrs. **iii)** Ovarian function after hysterectomy done at a pre-menopausal age: Most likely causes of premature ovarian failure after Hysterectomy where ovaries are conserved a) Interference with ovarian blood supply at the time of surgery. b) Disturbance of Endometrial ovarian relationship c) Deficiency of Uterine Prostaglandins d) Loss of putative reflex pathway from the cervix to the pituitary. **iv)** The appearance of menopausal symptoms. **v)** Difference between Natural Menopause and Surgical Menopause: Surgical menopause with bilateral oophorectomy increases morbidity and is linked to accelerated aging. **vi)** Recommendation for AUB management for benign gynecological disease: Therapeutic Indications of Hysterectomy can be narrowed down to a few life-threatening indications of the ovary, uterus, and cervical malignancies. Prophylactic oophorectomy is done in high-risk BRCA - positive patients.

KEY WORDS: Natural menopause, Surgical Menopause, Ovarian function after hysterectomy done at a pre-menopausal age, appearance of menopausal symptoms, Difference between Natural Menopause and Surgical Menopause, Recommendation for AUB management for benign gynecological disease.

INTRODUCTION:

It is a routine practice among gynecologists to recommend hysterectomy for benign gynecological diseases commonest being fibroid uterus.^[1]

Sapna Desai et al reported in their study done at the low-income setting of Gujarat the incidence of hysterectomy 20.7/1000 year women (95% CI 14.0, 30.8) was considered higher than in other countries at a low mean age of 36 years.^[2]

After completing the reproductive function the attitude among women towards the uterus special from

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low-income and low-education backgrounds is as the uterus is not needed any more.

It is better to get it removed. Hence for benign gynecological complaints at the early age of 30 and 40 decades, they opt for hysterectomies without being aware of its potential long-term health hazards.^[3] Young enthusiastic doctors perform hysterectomies to gain perfection over their surgical skills.^[2]

Through this article, I will discuss the various aspects of Natural and Surgical Menopause, the risks of early surgical menopause, and conservative treatment options for the benign gynecological disease.

Natural Menopause :

Natural menopause occurred as described by the stages of the reproductive aging workshop (STRAW) in 2001. The reproductive life is divided into 5 stages showing the transition of reproductive function^[4]. The 2011 STRAW+10 workshop reviewed

advances in the understanding of the critical changes in hypothalamic-pituitary-ovarian function that occur before and after the final menstrual period (FMP).^[5] STRAW+10 simplified bleeding criteria for the early and late menopausal transition, recommended modifications to criteria for the late reproductive stage (Stage-3) and the early post-menopause stage (Stage +1), provided information on the duration of the late transition (Stage-1) and early post-menopause (Stage +1) and recommended application regardless of women's age, ethnicity, body size or lifestyle characteristics.

Early Menopausal Transition (Stage-2):

During the early menopausal transition period menstrual cycle length has increased variability, defined as a persistent difference of ≤ 7 days in the length of consecutive cycles. Persistence is defined as recurrence within 10 cycles of the first variable length cycle. Cycles in the early menopausal transition also have variable FSH levels and low AMH levels and AFC.

Late Menopausal Transition (Stage-1):

The late menopausal transition is marked by the occurrence of amenorrhea of 60 days or longer. Menstrual cycles in the late menopausal transition are characterized by variability in cycle length, extreme fluctuations in hormonal levels, and frequent an ovulation. AMH levels fall and become undetectable levels. FSH levels > 25 IU/L is criteria which indicate a late transition, this stage is estimated to last on average 1-3 years. Symptoms, most notably vasomotor symptoms, are likely to occur during this stage.

EARLYPOSTMENOPAUSE (Stage +1a, +1b, +1c):

FSH continues to increase and estradiol continues to decrease until approximately two years after the Final Menopause Period(FMP), after which levels of each of these hormones stabilize. Thus, STRAW +10 recommended that Early Post Menopause be subdivided into 3 substages (+1a, +1b, and +1c).

Stages +1a and +1b each last one year and end at the time point at which FSH and estradiol levels stabilize. Stage +1a marks the end of the 12-month period of amenorrhea required to define that the FMP has occurred. It corresponds to the end of the 'perimenopause', a term still in common usage that means the time around the menopause and begins at Stage -2 and ends 12 months after the FMP. Stage +1b includes the remainder of the period of rapid changes in

mean FSH and estradiol levels. Based on studies of hormonal changes, Stages +1a, and +1b together are estimated to last on average 2 years. Symptoms, most notably vasomotor symptoms, are most likely to occur during this stage. Stage +1c represents the period of stabilization of high FSH levels and low estradiol values that is estimated to last 3 to 6 years, thus the entire early post-menopause lasts approximately 5-8 years. Further specification of this stage will require additional studies of trajectories of change in FSH and estradiol from the FMP through the late post-menopause.

Late postmenopause (stage +2):

Stage +2 represents the period in which further changes in reproductive endocrine function are more limited and processes of somatic aging take precedence. Vaginal dryness and urogenital atrophy become the leading symptoms. However, mean FSH levels fall again many years after menopause in the very elderly⁷⁰.

Hysterectomy And Endometrial Ablation:

Women in whom hysterectomy or endometrial ablation is done. They cannot be staged by menstrual bleeding criteria. Reproductive stage in these women can be assessed only by the supportive criteria of ovarian biomarkers. It is recommended to wait for minimum 3 months post surgery to assess endocrine status given emerging evidence that pelvic surgeries may transiently raise FSH levels.

The average age of Menopause is 51 years^[9] Menopause Transitional Symptoms occurring few years before final natural menopause are:

- 1) There is a change in the pattern of the menstrual cycle. The duration of the cycle becomes either longer or shorter irregular acyclical or inter-menstrual spotting.
- 2) Vasomotor hot flushes, night sweats, sleep disturbances.
- 3) Psychological and mental disturbances -worsening pre-menstrual syndrome, depression, irritability mood swings, loss of concentration, poor memory, vaginal dryness, decreased libido painful intercourse (dyspareunia).
- 4) Somatic symptoms -headache, dizziness, palpitations, breast pain, enlargement, joint aches and back pain, urinary complaints-incontinence, weight gain

SURGICAL MENOPAUSE:

Surgical menopause occurs when ovaries are surgically removed in a pre-menopausal woman

Stages of normal reproductive aging in women (STRAW+10):

Stages	-5	-4	-3b	-3a	-2	-1	+1a	+1b	+1c	+2		
Terminology	Reproductive				Menopausal Transition		Post menopause					
Duration	Early		Peak	Late		Early	Late		Early		Late	
						Perimenopausal						
	Variable duration				Variable		1-3 yrs	1 yr		1yr	3-6 yrs yr	Remaining life
Principle criteria												
Menstrual cycle	regular to variable	Regular	Regular	Subtle change in flow/length	Variable length of cycle > 7 days difference in length of consecutie cycles	Skipped cycles and interval of amenorrhea >60 days	Amenorrhea					
Supportive criteria												
Endocrinal criteria FSH AMH Inhibin B			Normal Low Low	Variable Low Low	Variable Low Low	Variable >25IU/L Low Low	Variable Low Low	Stabilize Very Low Very Low				
Antral Follicle Count 2-10 mm			Low	Low	Low	Low	Very Low		Very Low			
Descriptive characteristics												
Symptoms						Vasomotor symptoms likely	Vasomotor symptoms Most likely			Increasing symptoms of Uro genital atrophy		

causing an abrupt endocrine deficient state. Surgical menopause causes severe symptoms due to the sudden fall of estrogen, progesterone, and ovarian androgen.

In postmenopausal women, the ovary does not stop its function completely. It contributes to 50% of the testosterone and 30% of androstenedione. These androgens are converted peripherally to estrogen. The incidence of ovarian failure is 25-57% in women who have undergone hysterectomy alone. Though ovarian failure develops in 2-5 years after surgery, hormone deficiency occurs immediately and symptoms can occur as early as 24-48 hrs. The explainable reason is ovarian blood supply is affected post-surgery.

Patricia G. Moorman et al studied the increased risk of earlier ovarian failure is a possible consequence of Premenopausal hysterectomy.^[6]

Emanuel C. Trabuco et al studied Women undergoing hysterectomy who had similar antimüllerian hormone levels at baseline and experienced a greater percent decrease in levels after 1 year compared with referents, suggesting that hysterectomy may lead to ovarian damage that is unrelated to baseline ovarian reserve.^[7]

S. Muttukrishna et al in a study showed that ovarian inhibin A and B were cleared from the circulation within 12 hours of oophorectomy, whereas E2 and progesterone remain in the circulation for longer. A negative correlation between FSH, inhibin A, and inhibin B suggests that inhibins may contribute to the observed early rise in FSH after surgical

menopause.^[8]

William H. Parker et al reported that for women younger than 50 at the time of hysterectomy, bilateral oophorectomy was associated with significantly increased mortality in women who had never used estrogen therapy. At no age was oophorectomy associated with increased overall survival.^[9]

Causes of Premature ovarian failure after Hysterectomy where ovaries are conserved:

- Interference with ovarian blood supply at the time of surgery.
- Disturbance of Endometrial ovarian relationship
- Deficiency of Uterine Prostaglandins
- Loss of putative reflex pathway from the cervix to pituitary.

Surgical menopause occurs when ovaries are removed in pre-menopausal women causing an abrupt endocrine deficiency.

- Surgical removal of pathological or normal of one or both ovaries.
- Hysterectomy with bilateral salpingo-oophorectomy
- Abdominal resection for colorectal cancer
- Pelvic exenteration in carcinoma cervix
- Radiotherapy or chemotherapy-induced menopause
- While performing Uterine artery embolization

few polyvinyl particles go to the ovarian artery and its blood supply is affected.

Comparison between surgical menopause and natural menopause:

- I During surgical menopause vasomotor symptoms appear immediately and symptoms are more intense and last for more duration. Almost 90% of women with surgical menopause have these symptoms. They require high doses of estrogen and even testosterone to relieve the symptoms. They have a high chance of recurrence after the stoppage of treatment. In natural menopause, the vasomotor symptoms (VMS) is slow and starts gradually, which is less intense and for a short duration. Only 50% of women suffer from these symptoms. They respond to a low dose of estrogen and do not require testosterone. They have less chance of recurrence.
- ii) Psychological well-being and sexuality improved as the disease is treated significant loss of libido hormone therapy (HT) shows improvement. Testosterone or Tibolone is added. In natural menopause, the woman may be depressed and have anxiety disorder, no sudden change but reduced interest is due to vaginal dryness and painful coitus, HT shows improvement
- iii) Cardio Vascular Heart Disease (CHD)- Significant atherosclerosis, there is more chance of CHD. Early ET is cardioprotective less chance of CHD. ET is not recommended for cardio-protection.^[10]
- iv) BMD and fracture risk: in surgical menopause rapid and high incidence of osteoporosis and fracture due to rapid bone loss. Estrogen therapy (ET) shows improvement. Early initiation of ET to prevent symptoms. The dose is inversely proportional to age and continued till natural menopause

Natural menopause bone loss follows an exponential pattern 4-5 yrs after menopause (vertebral common), and ET fails to improve. Estrogen Progesterone Testosterone Replacement (E+P+T) for endometrial protection and symptoms. The smallest effective dose for the shortest possible time. Tailoring the dose as individualized for symptoms relief within 10 yrs of menopause.

Thus surgical menopause with bilateral oophorectomy increases morbidity and is linked to accelerated aging.^[11]

Thus it is better to conserve ovaries before natural menopause as its removal carries a high morbidity. Hysterectomy should be done only when other methods fail and oophorectomy should be

avoided. Meticulous efforts should be made to conserve the blood supply of ovaries.

Indian Menopause Society Clinical practice guidelines on menopause in 2013 have suggested evidence-based good clinical practice guidelines in the Indian perspective on the management of Abnormal Uterine Bleeding in a reproductive period which is the commonest indication for hysterectomy.^[12]

Polyp -hysteroscopic surgical removal of multiple polyps or polypoidal endometrium and fertility is not desired then LNG IUS can be combined with surgical removal.

Adenomyosis -LNG IUS, if LNG IUS is not accepted then GnRH agonist with Add back therapy, if it fails or is contraindicated then OCP, NSAIDS, and Progestogens for symptom relief. Conservative surgery (adenomyomectomy) in selected cases. A hysterectomy is the last resort.

Leiomyoma: Intramural or subserosal myoma (grade 2 to 6). Tranexamic acid or COC or NSAIDS, LNG-IUS, if treatment fails then myomectomy depends on location.

In women age >40 yrs of age, fertility is not desired for small fibroids (4-5 cms) medical management is followed by a hysterectomy.

Short term management -(up to 6 months) GnRH agonist with add-back therapy followed by myomectomy.

Long-term management-LNG IUS Newer treatment options - Progesterone receptor modulator - Ulipristal acetate or low dose mifepristone. Submucosal myomectomy (grade 0-1) hysteroscopy (<4cm) or abdomen or open route if >4cm

Malignancy- Atypical endometrial hyperplasia treatment is surgical if fertility is not desired then hysterectomy. Hyperplasia without atypia LNG IUS alternatively progestins.

COEIN -LNG IUS or Tranexamic Acid, NSAIDS, COCs, or cyclical oral progestins (D5 - 25) Luteal Phase Progestins (D 15 -25) only in AUB - O. Medical or surgical treatment failed or contraindicated GnRH agonists with add-back therapy. When steroidal and other options are not unsuitable consider Centchroman.

CONCLUSION:

So the Therapeutic Indications of Hysterectomy can be narrowed down to a few life-threatening indications.

- I Endometrial malignancy
- ii) Ovarian malignancy
- iii) Early invasive cancer cervix
- iv) Ovarian involvement complex-ovarian

cyst, endometriosis, chronic pelvic infection (PID).

- v) Prophylactic oophorectomy is done in high-risk BRCA - positive patients for breast or ovarian cancer

Thus limiting hysterectomy to only serious indications can save women from many potential diseases.

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Pregnancy with Osteogenesis Imperfecta - Rare Case Report

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ABSTRACT

Osteogenesis imperfecta is a rare inherited Connective tissue disorder with an expression that varies from mild to severe disease affecting bone, Sclera and middle ear. Fertility is preserved, especially in those patients with type I. We present hereby a pregnant woman with Osteogenesis imperfecta that was managed with multi disciplinary approach till postpartum duration. The objective of this report is to determine maternal and neonatal complications and prenatal diagnosis.

KEY WORDS: pregnancy, brittle bone disease, osteogenesis imperfecta, materna outcome, fetal outcome

INTRODUCTION:

Osteogenesis Imperfecta (OI), brittle bone disease characterised by multiple bone fractures, is a rare connective tissue disorder with variable phenotypic presentation.^[1] It occurs due to deficiencies in the synthesis of type I collagen. It has an incidence of 1/10,000 in the general population, and 1/25,000 to 30,000 in obstetric patients.^[2] It results from mutations in COL1A1 and COL1A2 genes which codes for collagen, involved in endochondral ossification, with consequent bone fragility and multiple spontaneous fractures or after mild traumas.^[3]

Though rare, it is the most common inherited disorder of connective tissue. There are nine major phenotypically different subtypes, which vary widely in severity. Type I (also known as classic non-deforming osteogenesis imperfecta with blue sclerae) is the most common with mild involvement without major deformities, and normal stature. Type II (also known as prenatally lethal Osteogenesis Imperfecta) is the most severe affecting neonates, and it is usually incompatible with life. In type III (progressively

deforming osteogenesis imperfecta) patients have short stature, triangular faces, and bone deformities. Type IV with hypertrophic calluses and calcification of the interosseous membrane of the forearm.^[4]

Pregnancy in osteogenesis imperfecta poses a major life-threatening risk to both mother and child. Venous thromboembolism, impaired wound healing, PPH, cardiac abnormalities and fetal congenital heart disease commonly complicate such pregnancy. Also with autosomal dominant inheritance, there may be 50% chance of fetal affection.

CASE REPORT:

A 33 years, **G2 P1 L1** with previous LSCS with Rh- negative pregnancy with known case of epilepsy with Osteogenesis Imperfecta (type 1) reported to ANC OPD at 24 weeks of gestation for routine ANC checkup.

Her first child had multiple fractures during his initial years of life and had blue sclera (Figure 1) which on screening was diagnosed as due to OI. Subsequent parental screening confirmed OI. She was also on antiepileptic drugs since 6 years.

Patient received initial antenatal care at other private clinic where she was offered invasive prenatal screening but the couple refused and opted for continuation of pregnancy.

Though her dual marker, NT/NB and target scan (Figure 2) were all normal. She was receiving antiepileptic drugs along with thyroid supplementation. Beside routine antenatal care, she

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Figure 1: Showing blue sclera of the patient.

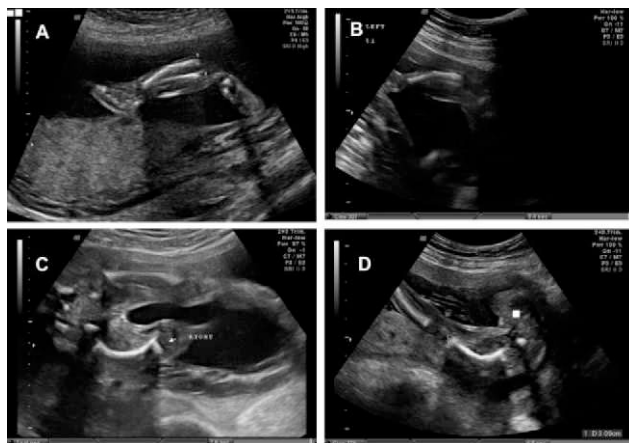


Figure 2: Prenatal ultrasound showing mildly curved lower limbs.

received antenatal prophylaxis and vigilant fetomaternal monitoring. She was put on calcium and vit D supplementation. At 32 weeks however her liquor started reducing, for which she was managed conservatively and was delivered by Cesarean section at 37 completed weeks under GA, as patient also had cervical disc prolapse.

DISCUSSION:

Fertility is preserved especially in patients with OI type I^[6] and pregnancy can be carried to term. The fetal diagnosis can be done through chorionic villus sampling and imaging exams of the fetus. If fetal OI is confirmed pre-natally, especially the lethal type, cesarean section is not indicated because, besides increasing maternal morbidity, it does not improve fetal prognosis. Cesarean sections do not decrease the number of fetal fractures in newborns with non lethal types of OI.

With advancement in medical care more women affected by connective tissue disorders are surviving through reproductive years and becoming pregnant. However, pregnancies can be carried to term with close antenatal surveillance and multidisciplinary team approach forms the mainstay of managing such pregnancies.

CONCLUSION:

Preconception counseling should be offered to those patients planning a pregnancy or to those who desire effective contraception, including sterilization for those who choose not to have a pregnancy or after a pregnancy.

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Oral Health Status Among Coal Mine Workers in Madhya Pradesh, India- A Cross-sectional Study

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ABSTRACT

The purpose of this study is to assess the prevalence of periodontal disease among coal miners and provide a basis for planning and evaluating the data from community oral health services in coal mine workers.

The present cross-sectional study was conducted in Coal Mine Field of Umaria District, Madhya Pradesh. The sample size of the study was 500. The information regarding the Medical Problem, oral Hygiene, tobacco use, alcohol use, frequency of sugar intake and visit to the dentist was done with the help of WHO Oral Health Questionnaire for Adults 2013. The clinical examination of the patients had been done according to World Health Organization Oral Health Assessment Form for Adults, 2013.

Majority of participants (75%) were more than 50 years old and having low education status. The high level of tobacco (99.2%) and alcohol (94.6%) consumption was seen among patients. Majority of the participants cleans their teeth once daily (63.8%) with tooth brush and tooth paste. The mean Caries level (DMFT score) was 2.39 ± 2.10 with 57.2% of the workers were having caries. Most of the patients were suffering from periodontal diseases and a large percentage of workers were having shallow and deep pockets.

The coal mine worker is severely affected by the occupational environment. The findings also highlighted the high tobacco and alcohol prevalence, higher periodontal disease and caries prevalence in the population.

KEY WORDS: Alcohol, Coal mine, World Health Organization (WHO), Tobacco

INTRODUCTION:

Good health is a fundamental goal for people and the society. The basic growth of nation depends upon the productivity and health of its people. According to WHO 'Health is a state of complete, physical mental and social well-being and not merely the absence of disease or infirmity'.^[1]

Occupational injuries cause major health problems in all nations.^[2] Coal mining is one of the largest, oldest industries in the world and in India. India is a fifth largest coal reserves and fourth largest coal producer in the world. 81 mining area in eight states are running through coal India.^[3]

Oral health, as already mentioned is an integral part of general health and plays an important role in improving the quality of life. The oral cavity is vulnerable to external agents, and some occupational exposures are associated with oral changes in both hard and soft tissues.^[4]

Environmental hazards contribute to poor oral health in many occupations, as oral cavity is a port of entry for many diseases and present several unique features, which makes it especially prone to occupational diseases.^[5]

The study conducted by Abbas et al. in Telangana district on Underground Coal Mine Workers highlighted the high caries prevalence, higher periodontal disease, traumatic injuries which requires immediate intervention.^[6]

The study by Cengiz et al. on coal mine workers in Turkey found overall prevalence of periodontal disease was found to be 96.2% and was determined by considering subjects with Community

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Periodontal Index scores of 1–4 as diseased and the healthy subjects comprised of a mere 3.8%.^[1]

There is relatively little available literature concerning the oral health status of coal miners. The purpose of this study is to assess the prevalence of periodontal disease among coal miners and provide a basis for planning and evaluating the data from community oral health services in coal mine workers.

Aim:

To Assess the Oral Health Status of Coal Mine Workers of Piparia coal mine at Umaria District, Madhya Pradesh.

MATERIALS & METHODS:

The study was approved by the Institutional Ethical Committee of Peoples Dental Academy, Bhopal. The present cross-sectional study was done under the Department of Public Health Dentistry, Peoples Dental Academy, Bhopal. The survey was conducted among the coal mine worker in Piparia coal mine at Umaria District, Madhya Pradesh after obtaining Written permission from the Authorities of the coal mine field. It was conducted to find the effect of coal on the oral health of the workers.

The sample size was calculated using the Epiinfo software. The Expected frequency of periodontal disease was 50% and Confidence Interval (C.I.) of 99% was taken. The total sample size calculated was 500. The study included the coal mine workers working at Piparia coal mine in Umaria District except those having systemic disease. The information regarding oral hygiene, tobacco use, alcohol use, frequency of sugar intake and visit to the dentist was done with the help of WHO Oral Health Questionnaire for Adults 2013. The oral Health of the coal mine worker was evaluated by using WHO oral Health assessment Form 2013.

The examination of the subjects was carried out in the selected Coal Mine Field, Subjects were examined seated on the portable dental chair, with the examiner standing approximately in 10 o' clock position, under natural daylight or using artificial illumination. The subjects were positioned so as to receive maximum illumination.

RESULTS:

The present study examined the oral health of 500 coal mine worker. The age of the participant shows that 375 (75%) participants were more than 50 years old and having low education status. The high level of

Table 1: Demographic factors.

Demographic Factors	Categories	Number of Patient	%
Age	25– 35 years	10	2%
	36 – 50 years	115	23%
	>50 years	375	75%
Education	No formal schooling	39	7.8%
	primary school	375	75.0%
	High school	59	11.8%
	Secondary completed	27	5.4%
Tobacco	Graduate or Postgraduate	0	0%
	Yes	484	99.2%
	No	16	0.8%
Alcohol	Yes	573	94.6%
	No	27	5.4%
Sugar Intake	less than one time	64	12.8
	Taken one time	129	25.8
	Taken two times	120	24.0
	Taken 2+ times	187	37.4

tobacco (99.2%) and alcholo (94.6%) consumption were seen among the coal mine workers. The sugar intake was high among coal mine workers. A large number of coal workers used to take sugar more than 2 times a day (37.4%) (Table 1).

Majority of the participants cleans their teeth once daily (63.8%) but still a large percentage of mine (36.2%) workers do not cleans their teeth regularly. Most of them use tooth brush with tooth paste for cleaning their teeth (Table 2). Most of the Workers (77.4%) had never visited the dentist and among those who was treated the dentist pain was the main reason for the visit (Table 3).

The Oral health of the workers was poor. The mean caries level (DMFT score) was 2.39 ± 2.10 with 57.2% of the workers were having caries. The Fluorosis was not seen in majority of patients. The major dental problem among them was periodontal health. Most of the patients were suffering from periodontal diseases and a large percentage of workers were having shallow and deep pockets (Table 4).

Table 2: Oral Habits.

		Number of Patient	Percentage
Cleaning of teeth			
Never		12	2.4%
Few times a week		88	17.6%
One times a day		419	63.8%
2 times a day		0	0%
Type			
Toothbrush		457	91.4%
Wooden toothpicks		1	0.2%
Plastic toothpick		0	0%
Thread (dental floss)		0	0%
Charcoal		4	0.8%
Chewstick/miswak		37	7.4%
Finger		1	0.2%
Tooth Paste			
use toothpaste to clean your teeth	Yes	458	91.6%
	No	43	8.6%
Tooth paste contain fluoride	Yes	2	0.4%
	No	0	0%
	Don't know	498	99.6%

Table 3: Oral Health care.

		Number of Patient	Percentage
How long is it since you had visited a dentist?			
Less than 6 months		9	1.8%
6–12 month		5	1.0%
More than 1 year but less than 2 years		14	2.8%
2 years or more but less than 5 year		32	6.4
5 years or more		53	10.6%
Never		387	77.4%
Reason to visit Dentist			
Consultation/advise		0	0%
Pain or trouble with teeth, gums or mouth		98	19.6%
Treatment/ follow-up treatment		8	1.6%
Routine check-up		0	0%
Don't know/don't remember		7	1.4%

Table 4: Dentition Status.

Variables	Levels	Number of patients	%
Caries Experience	No Caries	214	42.8%
	With Caries	286	57.2%
	Normal	428	85.6%
	Questionable	32	6.4%
	Very Mild	17	3.4%
Fluorosis	Mild	9	1.8%
	Moderate	8	1.6%
	Severe	6	1.2%
CPI	Score 0 (Healthy)	27	5.4%
	Score 1 (Bleeding)	65	13.0%
	Score 2 (Calculus)	297	59.4%
	Score 3 (Shallow Pocket)	79	15.8%
	Score 4 (Deep Pocket)	47	9.4%

DISCUSSION:

Standard of living of People has been enhanced by the expansion of industrial activity. Improvement in technology has made jobs very easy in several aspects, but, at the same time, has created new occupational hazards that have drawn public attention^[8] Exposure to chemical, physical and biological agents in the work place can result in adverse effects on workers ranging from simple discomfort and irritation to debilitating occupational diseases.^[8] In addition, the health of industrial workers often goes uncared due to their stressful working conditions, busy schedule and poor economic conditions.^[9]

Although coal mining is one of the oldest industry in the world, India has a long history of commercial coal mining covering nearly 220 years starting from 1774 by M/s Sumner and Healthy of East India Company in the Raniganj Coalfield along the Western bank of river Damodar.^[10] The activities such as drilling, blasting, and transportation are the central cause behind air pollution. The emphasis of large-scale mechanisation of surface mining has resulted in widespread concern about deterioration of environmental quality, especially the increase in concentration of suspended particulate matter (SPM) within and around the mining site. Vehicular traffic on the haul road of mechanised opencast mines has been

identified as the most prolific source of fugitive dust emitted from the surface coal mines.^[11]

Coal dust that once produced contributes to particulate matter in the air which ultimately causes air pollution. Coal dust and residues are one of the major sources of potential harmful elements (PHEs) contamination in air^[12]. The PHEs find their ways to human via dust ingestion, inhalation, and dermal absorption^[13] and oral intake through consumption of contaminated food and water^[14]. The PHEs are considered as hazardous environmental contaminants owing to their toxicity, persistent and bio accumulative nature^[14-15].

In the present study it is noted that the maximum number of mining employees i.e. 50.0% were illiterate or had completed the primary schooling (32.4%). Similar high percentage illiteracy was noted in the coal mining workers of Telangana^[6]. The studies conducted on other types of mine worker also had similar result like 62.4% workers were illiterate in stone plants in Rajasthan.^[16]

Similar level of literacy was seen in the Brazilian metal plant workers,^[17] cement mining workers in Sirohi district of Rajasthan.^[18] Contrastingly, around 67.7% of the sea farer had the secondary level education.^[19]

ORAL HABITS:

Usage of the tobacco products in the present mining employees (99.2%) was high in comparison to the general population (61.67%) and similar levels were found in coal mine workers (84%) in Telangana^[11], battery mining workers of Kanpur city (85.71%) (20). Contrastingly, less consumption (58%) of the tobacco products was seen in the Jordanian battery industries workers^[21]. Alcohol was consumed by 80.80% of the mining workers, which is way higher in comparison to the general population (60.42%). However in the study by Cengiz et al.^[7], it is seen that the working population consumed less alcohol than the control group or the general population. In disagreement to this finding less consumption (2.3%) of the Alcohol was reported in the coal mining workers of Telangana.^[6]

According to the earlier literature, physically tedious work drives people to consume alcohol and tobacco which further deteriorate their oral health.^[22] Another reason which can be quoted for the high prevalence of adverse Oral habit practice in the coal workers is the peer influence, as most of the task which they have to perform in the team^[6], they might acquire these habits as influenced by peers.

ORAL HYGIENE HABITS

The finding of the present study shows 91.4% of the workers use tooth brush to clean their teeth which was in contradiction to the study conducted by Cengiz et al.^[7] where only 25% coal mine worker use tooth brush to clean their teeth.

The result of the study were in accordance to the study by Abbas et al.,^[6] on Telangana coal mine workers where 100% workers used to brush their tooth once daily. Similar high percentage of brushing once in a day in brass mining workers was reported by Tirthet al.,^[23] and construction workers (76.9%) of Chennai city by Sakthi et al.^[24]

SUGAR INTAKE:

The sugar intake was high among coal mine workers. A large number of coal workers used to take sugar more than 2 times a day (37.4%) and 24.0% of workers used to take sugar two times a day. The result was in consistent with the result of the study done by Dabhadker et al. on nutritional status of coal mine workers in Chhatisgarh where they also found high intake of sugar among coal mine workers.^[25]

According to Dabhadker et al.^[25] mining is energy demanding process, creates psycho-physiological stress on the body and also increases the rate of basal metabolism thus enhances the body's energy requirements and thus increases the sugar consumption by coal mine workers.

DENTAL VISIT:

The majority of coal mine workers (77.4%) had never visited to the dentist. Among the workers (23.6%) who had visited the dentist pain is the main (19.6%) reason for visit. The study shows low percentage of visiting dentist in comparison to the study of Cengiz et al. on Turkey coal mine workers population where 37.7% of the individuals had visited the dentist.^[7]

DENTAL CARIES:

The prevalence of dental caries in the present study was 57.2%, with a mean DMFT index of 2.39 ± 2.10 which was similar to the findings of the study conducted by Abbas et al.,^[6] with mean DMFT level 2.32 ± 2.99 . Prevalence of dental caries in present study is in accordance with AE Van Der Merwe et al., where 55.43% of 92 subjects showed dental caries.^[26] In another study by Duraiswamy et al.,^[27] prevalence of dental caries was 73.7% with the mean DMFT index found to be 3.13, as compared to 2.39 in the present study.

About more than half of study subjects showed caries in the present study which can be attributed to their oral hygiene practices, absence of dental care in the locality, fear of dental treatment, lack of utilization of appropriate care provided by mine authorities, negligence and most of all lack of awareness about oral health.

PERIODONTAL DISEASE:

Periodontal disease is the most prevalent condition seen in the study population with 95.8% subjects having unhealthy periodontium in terms of gingival bleeding and/or periodontal pockets. These findings are in accordance with those of Solanki et al., and Rushabh J Dagli et al., where 95.1% of subjects are periodontally diseased with only 4.9% free of disease and 98.25% periodontal disease prevalence with only 1.75% of subjects having healthy periodontium respectively.^[16,28] The present findings also coincide with those of Santhosh Kumar et al., where the prevalence of periodontal disease of any degree was found to be 98.2%, that is, only 1.8% of the green marble mine workers were free of periodontal disease.^[29] Present study findings are in contrast to those of AE Van Der Merwe et al., where 40.2% periodontal disease prevalence was observed.^[26]

A very bad oral hygiene of the workers would be the foremost factor associated with gingivitis and periodontitis of the workers. Age could be another factor for such an unhealthy periodontium because the mean age of study population is around 50 years. Also, the general health condition was not assessed in the present study. This was a limitation of this study as this could have influenced their periodontal status. Workers always were exposed to coal dust and silica particles which might be associated with tooth wear, gingivitis and periodontitis.

Continued usage of tobacco in either smoking form or chewing form might as well influence periodontal status of the workers. Their rotating shift work schedules could influence their body physiology and metabolism which in turn could have an indirect periodontal influence. Improper tooth brushing techniques, neem stick usage for cleaning teeth also could have an impact on gingival recession, loss of attachment.

CONCLUSION:

The coal mine worker is severely affected by the Occupational Environment. Coal mine workers had poor oral health status. The findings also

highlighted the high tobacco and alcohol prevalence, higher periodontal disease and caries prevalence in the population.

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Cemento-Ossifying Fibroma – A Massive Lesion in Mandible-A Case Report

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ABSTRACT

Cemento-ossifying fibroma (COF) is a rare benign fibro-osseous neoplasm commonly involving the jaws. These lesions are predominantly seen in between 2nd to 4th decades of life more commonly in women than men. It's a slow growing mass attain a larger size with passage of time and causes facial deformity if left untreated. We are reporting a case of COF in 50yr old male with huge swelling over a period of 2 years involving the left side of the lower jaw crossing the midline with gross facial deformity.

KEY WORDS: Cementifying, cementosseous, ossifying, fibroma, dysplasia

INTRODUCTION:

The COF is a benign tumor of the oral cavity which is mesenchymal in origin, and it consists of highly cellular, fibrous tissue with varying amounts of osteoid and cementum-like material, that resembles the bone, the cementum, or both, which is most commonly seen in the third and fourth decades of life and is more frequent in women than in men. The periodontal layer contains multipotent cells which are capable of forming cementum, bone, and fibrous tissue^[1]. Radiologically, cemento-ossifying fibroma shows varying patterns depending on the degree of mineralization of the lesion^[2]. It shows unilocular as well as multilocular intraosseous structures. Histologically, these tumors consist of well vascularized fibrocellular tissue with the capacity to produce immature bone trabeculae and cementoid formations, though these findings can also be seen in fibrous dysplasias^[2]. These benign fibro-osseous lesions can involve any part of the facial skeleton, though 70% of the lesions in the head and neck region of which mandible is more common site^[1]. These lesions grow slowly and are unnoticed by the

patient until swelling of the face becomes evident; in a few cases, the tumor may grow rapidly and cause symptoms^[1]. The tumor appears as intrabony slow growing asymptomatic mass causing expansion of cortical plates, displacement of root and facial deformity^[3]. Here we are reporting a similar case of COF with some contrast features which was seen in 50yr old male with gross facial asymmetry.

CASE REPORT:

A 50 year old male patient came with a complaint of slow growing painless swelling in his lower right and left front teeth region since 2 years. With difficulty in mastication and with no signs of difficulty in deglutition or breathing. No underlying significant medical history was elicited.

On extra-oral examination, a diffuse swelling was present on the lower and middle 3rd of the face. Extending from corner of mouth to the 2cm below to lower border of mandible superoinferiorly, and from right parasymphysis region to crossing the midline to left ramus of the mandible mediolaterally. Measuring approximately 6x10cm. With diffuse margins, overlying skin appeared to be normal (Figure 1). On palpation, it was non tender, firm to hard in consistency. Right and left submandibular lymph nodes were enlarged, mobile, soft and non-tender. On intra-oral examination, a massive growth was present extending from right premolar region crossing the

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Figure 1: A huge swelling on left lower third of face with facial deformity.

midline up to the left retromolar region. Surface was smooth and lobulated. Mucosa over the growth appears to be erythematous and stretched, measuring approximately 8x5cm antero-posteriorly with gross buccal and labial vestibular obliteration. In posterior region indentations of upper teeth were seen with keratosis and ulcerations. On palpation, it was non tender, firm in consistency, tongue was elevated. With buccal and lingual cortical plate expansion in left side (Figure 2) which was extending up to right side crossing the midline. 41,42,31,32,33,34,35,36,37 were clinically missing, grade III mobility was elicited with



Figure 2: Intra oral examination revealing growth with indentations, keratosis and ulcerations.



Figure 3: OPG showing multi-locular radiolucency with sclerotic border.

38 and 43. The patient was advised orthopantomograph that revealed multilocular radiolucency with sclerotic border extending from left ramus to the mandible crossing the midline upto right second molar region along with the thinning of inferior border of mandible with the root resorption of 43,44,45, 46 and mesial root of 47 and (41,42,31,32,33,34,35,36 and 37) were missing (Figure 3).



Figure 4: PA view of skull showing huge expansile lesion with right angulation of septae.

To know the lower extension of the lesion, since lower border of mandible was not seen clearly in OPG the patient has advised for PA view which revealed multilocular radiolucency with corticated border and expansion of outer cortical plate, thinning and expansion of septae (Figure 4).

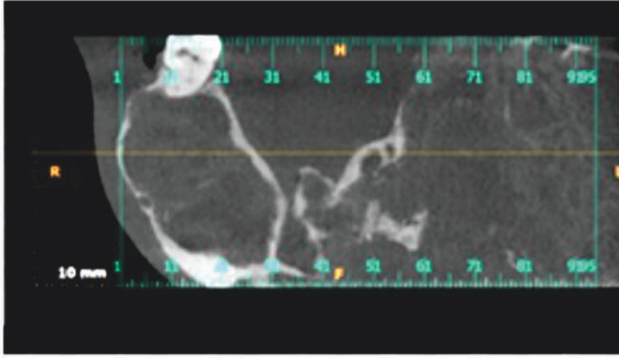


Figure 5: CBCT showing single hypodense lesion crossing the midline.

To see the internal structure of the lesion CBCT was advised (Figure 5) which revealed a single large hypodense lesion crossing the midline. The lesion appears to be extending till mesial aspect of mandibular right third molar. The posterior extent of the lesion on the left side is not visible. Superio-inferiorly the lesion appears to be extending from the crest of the residual ridge till the lower border of mandible. Bucco lingual extent of the lesions shows bi-cortical expansion with destruction of the buccal cortical plate. There is displacement of 43 and 44 labially. The lesion has caused inferior displacement of the IAN canal bilaterally. The internal aspect of the lesion shows multiple areas of hyperintensities and multiple incomplete septae in the mandibular right premolar and molar region.

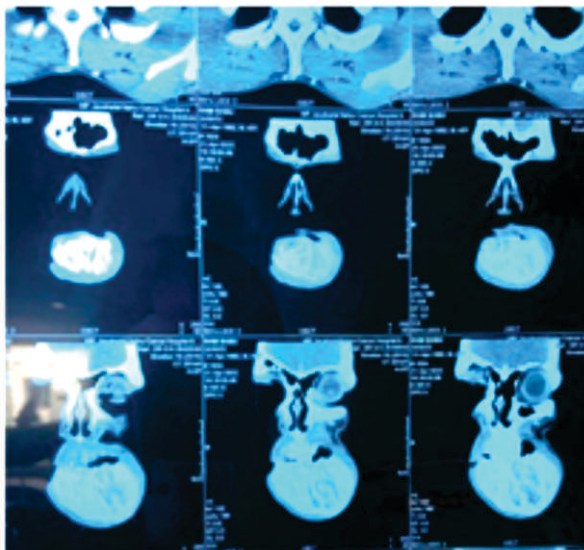


Figure 6: Showing CT scan of face with extension of the growth.

The lesion has caused spike shaped external resorption of the mandibular right premolar and molars. Based on history, clinical findings and radiographic findings a

provisional diagnosis of central giant cell granuloma was given, cement-ossifying fibroma, ameloblastoma, KCOT and myxoma were considered under differential diagnosis. To know the extension of the lesion into the other facial structure computed tomography of face was advised that revealed expansile lesion containing ground glass matrix noted involving the central arch, both horizontal ramus, left lower alveolus and angle of left hemi-mandible. The lesion contain ground glass attenuation with thin internal bony septations and multi focal areas of cortical thinning with subcortical erosion. No other bone or extra osseous soft tissue component seen (Figure 6).

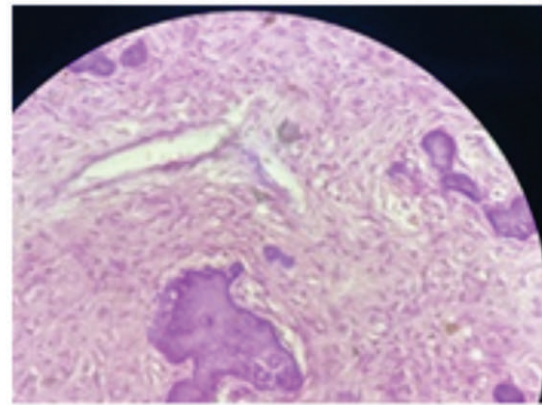


Figure 7: Showing histopathological section with hyperplastic and para-keratotic stratified squamous epithelium.

Core needle biopsy was performed, histopathological examination showed hyperplastic and para-keratotic stratified squamous epithelium with sub-epithelial fibrous tissue comprises fusiform to spindle cells with ovoid nuclei and eosinophilic cytoplasm (Figure 7), it was suggestive of benign fibro-osseous lesion involving the lower jaw. Since the lesion was massive hemi-mandibulectomy was performed from right premolar region up to the left retromolar area with reconstruction free fibula flap. After surgical resection the specimen was sent for histopathological confirmation.

That revealed variable fibroblast and spindle cell proliferation with abundant chunks of immature woven bone arranged in Chinese letter pattern with irregular and round shaped. The immature bony trabeculae, bone lacks osteoblastic rimming and foci of cartilaginous differentiation noted, a final diagnosis made as a cement-ossifying fibroma.

DISCUSSION:

These benign fibro-osseous lesions can arise from any part of the facial skeleton and skull, with 70%

of cases arising in the head and the neck region and principally seen in the jaws^[1]. It is a slow-growing lesion with prevalence rate seen in women between the third and fourth decades. In which most of the cases are asymptomatic, the growth of the tumor over a period of time may lead to facial deformity, with the appearance of a mass causing discomfort in mastication and speaking or mandibular expansion, and the displacement of dental roots^[2]. Today cemento-ossifying fibroma is widely accepted because both osseous and cemental tissues are seen commonly in a single lesion^[3]. In our case also patient had a large bony hard swelling extending from left molar ramus region crossing the midline of mandible upto right premolar region which was asymptomatic and caused facial deformity, displacement of roots and loss of teeth and expansion of buccal and lingual cortical plates. The highlighting features of this case is seen in male which is predominance is female as compared to male with the ratio of 4:1 mentioned reported by Basudev Mahato et al in 2015^[3] and in an old patient which is mostly seen in 2nd to 4th decade reported by Basudev Mahato et al in 2015^[3] in the mandible crossing the midline.

CONCLUSION:

Cemento ossifying fibroma is a rare benign neoplasm that affects the lower jaws commonly present as a slow growing progressive lesion that might reach enormous site with facial deformity if left untreated. COF should be considered under differential diagnosis for slow growing lesion of the jaws. No classic appearance will distinguish this from other fibro-osseous lesion. It can only be confirmed by histopathological evaluation. Early diagnosis and surgical resection will provide good prognosis and better aesthetic results.

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A Comparative Study to Assess the Effectiveness of Iron Folic Acid Tablets Supplementation During Menstruation Among the Adolescent Girls Studying in Selected Colleges (MP)

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ABSTRACT

Iron deficiency is the most widespread nutritional problem in the world. More than two billion women are estimated to suffer from iron deficiency, mostly in developing countries. The prevalence of anemia is commonly seen due to severe iron deficiency in a population. The M.P. State government has accepted anemia as one of the major reasons of high MMR in the state. Nearly 46.9 per cent urban and 59.6 per cent rural women population in state are anemic.

The aim of the study is to assess the effectiveness of Iron Folic Acid tablets supplementation during menstrual period among the adolescent girls studying in selected colleges (M.P).

Pre-test post-test control group design with true experimental approach was adopted to evaluate the study. The sample consist of 100 adolescent girls studying in selected college. Random sampling technique was used for the selection of the participants.

The result of the study revealed that the post-test Hb level of experimental group has increased by 38%, Hb level stabilized in 28% cases and Hb level remained low in 34% cases. The total difference in pre-test score mean is 11.134 and SD is 0.90 and post-test score mean is 11.198 and SD is 0.64 in experimental group.

KEY WORDS: adolescent girls, haemoglobin level, iron folic acid supplementation, menstrual period.

INTRODUCTION:

Iron deficiency is the most widespread nutritional problem in the world. More than two billion people are estimated to suffer from iron deficiency, mostly in developing countries.

The M.P. State government has stated that Anemia is one of the major reasons of high MMR in the state. According to state assembly revelations, state had 335 MMR (per 1 lakh live births) during the year 2014-16 as per Sample Registration Survey (SRS) and it declined to 310 MMR in the year 2007-09 as per the Annual Health Survey, 2010.

As per the personal experience of the researcher, during posting in community and urban

areas, the researcher found that there is high prevalence of iron deficiency Anemia among adolescent girls augmented with poor eating habits, which reflects their poor status of nutrition.

For combating this anemic problem of adolescent girls, Government of India Implemented weekly Iron Folic acid tablets supplementation to the school going girls.

The main objective of the study was to assess the effectiveness of Iron Folic acid tablet supplementation during menstruation period.

OBJECTIVES OF THE STUDY:

1. To assess the pre haemoglobin level of adolescent girls.
2. To administer Iron Folic Acid tablets (100 mg) supplementation during menstrual period among adolescent girls.
3. To assess the post haemoglobin level of adolescent girls

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4. To evaluate the effectiveness of iron folic acid tablets supplementation during menstruation period among the adolescent girls of experimental group.
5. To find out the difference between post haemoglobin level of both experimental and control group.

HYPOTHESIS:

- H₀:** There is no significant difference in Hb level after implementation of iron folic acid supplementation among adolescent girls during menstruation period
- H₁:** There is significant difference in Hb level after implementation of iron folic acid supplementation among adolescent girls during menstruation period in experimental group.

RESEARCH METHODOLOGY:

- **Research approach:** Quantitative research approach was used.
- **Research design:** Pre test post-test control group research design was used.
- **Independent variable:** administration of iron & folic acid tablets supplementation among adolescent girls is independent variable.
- **Dependent variable:** The Hb level of adolescent girls is dependent variable.
- **Research setting:** The study was conducted in selected
- **Population:** The target population is adolescent girls.
- **Sample size:** 100 adolescent girls studied in selected colleges.
- **Sampling Technique:** Random sampling technique was used for the study.

ETHICAL CONSIDERATION:

Ethical clearance obtained from the institutional ethics committee.

RESULTS:

The findings of the study revealed that the Hb level of experimental group has increased in 38% of cases.

Finding related to post test score of Hb level of control group-

According to the findings the Hb level of control group in that 18% (9) have increased hb level, 12% (6) have stable Hb level and 70 % (35) have decrease hb level.

Table 1: Frequency and percentage distribution of socio demographic variables of Participants (n=100).

Variables	Frequency	Percentage
Age		
18-19	63	63%
20-21	37	37%
Religion		
Hindu	60	60%
Muslim	12	12%
Christian	9	9%
Others	19	19%
Place of residence		
Urban	70	70%
Rural	30	30%
Dietary Patten		
Vegetarian	34	34%
Non vegetarian	66	66%
Duration of Menstruation Cycle		
1-3 days	30	30%
4-5 days	62	62%
6-7 days	3	3%
More than 7 days	5	5%
Duration of Menstruation period		
Less than 28 days	51	51%
28 days	17	17%
More than 28 days	42	42%

Finding related to Effectiveness of iron tablets supplementation during menstruation period among adolescent girls of experimental group.

The findings of the study revealed pre-test score of Hb level and post test score of Hb level and difference of experimental group participants. In this the mean is 11.134 and SD is 0.90 in the pre - test of experimental group and in post- test experimental group mean is 11.98 and SD is 0.64, t value is 0.709 and p value is <0.0001.

Findings related to difference between post hb level of experimental and control group.

In the study findings, the post test score of Hb level difference of experimental group mean is 11.198 and SD is 0.641 and in control group participants mean value is 10.714 and SD is 0.682. t value is 28.47 and p value is < 0.005 and significant using unpaired t test.

Table 2: Show the Post-test score of Hb level in experimental and control group.

Hb level	Experimental group		Control group	
	Frequency	Percentage	Frequency	Percentage
Increased	19	38%	9	18%
Stable	14	28%	6	12%
Decreased	17	34%	35	70%
TOTAL	50	100%	50	100%

Table 3: Effectiveness of iron tablets supplementation during menstruation period among adolescent girls of experimental group.

Hb level score	Mean	SD	N	t-test value	p value
pre-test experimental group	11.134	0.9	50	0.709	<0.0001
Post-test experimental group	11.198	0.64	50		

Table 4: Difference between post Hb level of experimental and control group.

Hb level score	Mean	SD	N	Unpaired t test	p value
Post-test experimental group	11.198	0.641	50	28.47	< 0.005
Post-test control group	10.714	0.682	50		

After completing the study control group adolescent girls also received the Iron folic acid tablets supplementation for three months.

CONCLUSION:

The above study showed that the Supplementation of Iron Folic acid tablet during menstruation period is helpful in preventing and maintaining Hb level among adolescent girls.

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A Quasi Experimental Study to Assess the Effectiveness of Black Cumin Water on Involution of Uterus Among Postnatal Mothers in People's Hospital Bhopal (M.P.)

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ABSTRACT

Involution of uterus is a process in which uterus size is reduced and become pregravid in shape and Size. It begins soon after the placenta expulsion and lasts & for approximately 6 week (42 day). At the timed delivery the uterus size is 20 X 12 X 7.5 cm approximately and it is about 1000 gm in weight. In this study a Quasi- experimental research design (two groups are pre-test and post -test design) and qualitative evaluative approach is used. The sample consisted of 30 post-natal mothers, by using purposive sampling technique. The conceptual frame work is used for the study was Roy adaptation modal of goal attainment. Pre-test was administered to mothers after two days of delivery in both groups and post-test administered after 12 days of the delivery. Experimental group pre-test 15 (100%) of post-natal mothers having poor involution of uterus, 00 (0%) of post-natal mothers having average involution of uterus, 00 (0%) of post-natal mothers having good involution of uterus. Control group pre-test 15 (100%) of 00 (0%) of post-natal mothers having average involution of uterus, 00 (0%) of post-natal mothers having good involution of uterus. Post-test in experimental group 00 (0%) of post-natal mothers having poor involution of uterus, 01 (7%) of post-natal mothers having average involution of uterus, 14 (93%) of post-natal mothers having good involution of uterus and control group in post-test 00 (0%) of post-natal mothers having poor involution of uterus, 12 (87%) of post-natal mothers having average involution of uterus, 03 (13%) of post-natal mothers having good involution of uterus .The t value is found to be with the significance level of p value 0.05.

This study revealed significant progress in involution of uterus among postnatal mothers of experimental group after providing the black cumin water for 10 days after 2nd days of delivery (100 ml water, three times in a day). Black cumin water is found to be safe and beneficial for postnatal mothers.

KEY WORDS: Assess, effectiveness, black cumin water, involution of uterus, post-natal mothers.

INTRODUCTION:

Involution of uterus is a process in which uterus size is reduced and becomes pregravid in shape and size. It begins soon after the placenta expulsion and lasts & for approximately 6 week (42 day).^[1] At the timed delivery (fullterm gestation) the uterus size is 20 X 12 X 7.5 cm approximately and weight about 1000 gm. After involution, uterus is reverted to pregravid

state and weight of uterus approximate 60 gm.^[2]

Puerperium is the 6 weeks following childbirth during which the body tissues, especially the pelvic organs revert back approximately to the pre-pregnant state both anatomical and physiological.^[3]

Circulatory system, harmons and internal reproduction system of mother resumes back to pregravid state.

Kumari L Sajithara, Remya R, Chithra (2022), Conducted a study in District hospital, Neyyattinkara. on effects of black cumin water on involution of uterus among primi postnatal mothers. They used quasi-experimental research approach. By using non probability purposive sampling technique, total 60 sample were selected among post-natal mothers, 30 were in control group and 30 were in experimental group. Data were collected by observational rating

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scale within 24 hours of delivery, intervention was given in 90ml of black cumin water which was administered for 3 times per day for 03 days. and analyzed by using 't' test. Result shows that there was a significant difference in the involution of uterus in experimental group there are no association between involution of uterus among primi postnatal mothers with selected demographic variables.^[11]

Black cumin is very use full seed that can be explored for safe and effective medicine for human health.^[4-5]

OBJECTIVE:

- ❖ To measure fundal height & administer pretest to post-natal mother in experimental and control group.
- ❖ To give the black cumin leukewarm water (boiled with black cumin seeds), three times a day for 3 days to experimental group of post-natal mother.
- ❖ To assess the post-test on experimental and control group among post-natal mother.
- ❖ To find out association between post-assessment of experimental group and control group among post-natal mothers with selected demographic variables.

HYPOTHESES:

H₀: There is no significant difference between pre-assessment score (fundal height) and post-assessment score in experimental group among post-natal mothers after administration of black cumin water.

H₁: There is a significant difference between pre-assessment score (fundal height) and post-assessment score in experimental group among post-natal mothers after administration of black cumin water.

INCLUSIVE CRITERIA:

- 1) Primi Post-natal mothers.
- 2) Post-natal mother who are able to understand Hindi or English.
- 3) Post-natal mother who are willing to participate in the study.
- 4) Only primi post-natal mothers after two days of delivery.
- 5) Mother who are breast feeding the baby.
- 6) Post-natal mother who has normal delivery.

MATERIALS & METHODS:

In this study a Quasi experimental research

design and qualitative evaluative approach is used. The sample consisted of 30 post-natal mothers, in which 15 are in experimental group and 15 are in control group by using purposive sampling technique. The conceptual frame work is used for the study of Roy's adaptation model of goal attainment. Tool used for data collection was fundal height measuring tape, pre-test & post-test questionnaire were administered. Data statistically analysis by the t-test, p-value is 0.05 and chi-square test was used. The permission taken from institution ethical committee (IEC).

RESULTS:

- ❖ Age: out of total sample of 15 mothers in experimental group, majority (53%) were in the age group 20-26 years, and 08 mothers (53%) were in the age group of 20-26 years, 06 mothers (40%) were in the 27-33 years of age and 01 (7%) were in the 34-40 years of age.
- ❖ Age: out of total sample of 15 mothers in control group, majority (53%) were in the age group 20-26 years, 05 (33%) were in the 27-33 years of age, and 01 (7%) were in the 34-40 years of age.
- ❖ Weight: out of total sample of 15 mothers in experimental group, majority 03 (20%) were in the weight of post-natal mothers 35-45 kg., 10 (67%) have weight of post-natal mothers 46-56kg. 02 (13%) weight of post-natal mothers >50 kg.
- ❖ Weight: out of total sample of 15 mothers in control group, majority 04 (27%) were weight of post-natal mothers 11 (73%) have weight of post-natal mothers 46-56kg. group 00 (0%) weight of post-natal mothers >50 kg.
- ❖ Height: out of total sample of 15 mothers in experimental group, majority 04 (13%) were height of post-natal mothers <150cm, 13 (87%) 12 (80%) have height of post-natal mothers 151-170 cm, 00 (0%) height of post-natal mothers >171cm.
- ❖ The majority of post-natal mothers in experimental group is mothers 08 (53%) live in rural area, 07 (47%) live in urban area.
- ❖ In control group majority of postnatal mothers 09 (60%) live in rural area, 06 (40%) live in urban area.

Table 1: Analysis of Difference between Pre-Test and Post-Test:

Groups	Test	Mean	SD	t test value	df	Tabulated Value	significant
Experimental	Post test	3.5333	1.2037	7.7192	28	2.048	Significant at p value 0.005
Control group	Post test	6.7333	1.0625				

- ❖ The majority of post-natal mothers in experimental group is 12 (80%) are have episiotomy “YES”, 03 (20%) are have episiotomy “NO”.
- ❖ In control group majority of postnatal mothers 10 (67%) are have episiotomy “YES”, 05 (33%) are have episiotomy “NO”.

Section B

Assess the effectiveness of black cumin water among postnatal mothers for post-test in both groups by using fundal height measuring tape:

The measurement of Post-test done among postnatal mothers in both groups. The mean and standard deviation of post-test in experimental and control groups among postnatal mothers on involution of uterus regarding black cumin water. The treatment is only given to experimental group. Mean of experimental group is 3.5333 and for control group 6.7333. standard deviation of experimental group is 1.2037 and for control group 1.0625.

Describe that post-test mean and SD in both groups. In Experimental group mean was 3.5333 & SD was 1.2037. in control group mean was 6.7333 & SD was 1.0625, with t-test value is 7.7192 and tabulation value is 2.048. Which was found to be more than tabulated value ($p = 0.05$); thus, the black cumin water is effective in involution of uterus among postnatal mothers.

Section C

Association between post assessment of experimental group and control group among post-natal mother with socio demographic variables:

There is no significant association between both groups. Chi-square test was used to analyze the data to find the association between demographic variable with Post-test Score of both groups in involution of uterus among postnatal mothers. socio-demographic variables show the result that of post-test in both groups. Age of the mothers? Chi square value is found with no significance level of p value 0.05. Weight of the mother, chi square value is found with no significance level of p value 0.05. Height of the mother,

chi square value is found with no significance level of p value 0.05. Education status of the mother, chi square value is found with no significance level of p value 0.05. Occupation, chi square value is found with no significance level of p value 0.05. Income of the family, chi square value is found with no significance level of p value 0.05. Area of the living, chi square value is found with no significance level of p value 0.05. Gravidity of the mother, chi square value is found with no significance level of p value 0.05. Duration of the labour, chi square value is found with no significance level of p value 0.05. Episiotomy applies on the mother; chi square value is found with no significance level of p value 0.05.

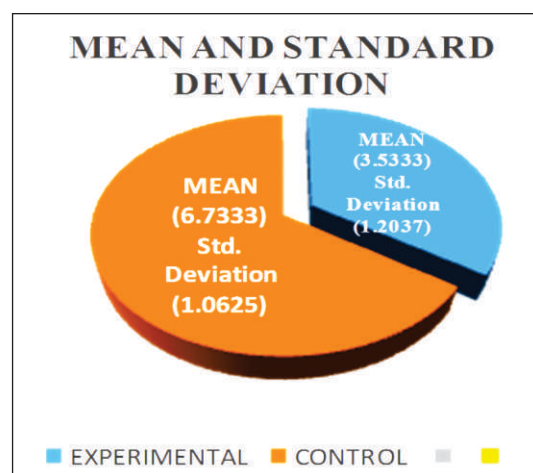


Figure 1: Post-test in both groups score according to Mean & Standard deviation.

CONCLUSION:

The study was done to assess the effectiveness of black cumin water on involution of uterus among postnatal mothers in People's Hospital Bhopal (M.P.). Following conclusion are drawn from the present study findings:

- Involution of uterus among postnatal mothers decreases after given the black cumin water in experimental groups.
- Post-test mean and SD in both groups. Experimental group were 3.5333 & 1.2037 and control group were 6.7333 & 1.0625, with t- test value 7.7192, d.f. 28, tabulated value

2.048. These reading indicate the effectiveness of black cumin water on involution of uterus among postnatal mothers.

- Use of black cumin water on experimental group in decrease involution of uterus among postnatal mothers.

IMPLICATIONS:

In today's nursing work or health care team system the role and participation of nurse have changed. In modern nurse are not only provide care of patient but also, efficiently, actively and skilful work as nurse education, nurse leader, nurse worker, nurse researcher and they are also work as policy marker and participate in various collaborative and independent research work at national and international level.

NURSING EDUCATION:

The nursing curriculum should emphasize on care of the present study emphasizes on providing the black cumin water regarding effectiveness of prevention subinvolution of uterus, infection and PPH.

NURSING ADMINISTRATION:

The nurse administrator should organize seminars on effect of black cumin water on involution of uterus among postnatal mothers.

NURSING RESEARCH:

The evidence-based nursing practice must take to assess the effectiveness of black cumin among postnatal mothers' prevention of PPH, infection and sub involution of uterus. Research work need to be conducted the effectiveness of black cumin regarding involution of uterus among postnatal mothers.

LIMITATIONS:

- ❖ Study sample is limited to 30 post-natal mothers.
- ❖ The study is limited only to primigravida postnatal mothers.
- ❖ Post-natal mother who are aged between 20 to 40 years.
- ❖ Limited time was available for the study.
- ❖ The study is limited to postnatal mother who has normal delivery.

RECOMMENDATION:

- ❖ The same study can be replicated on a larger

sample and also at different setting for generalization of finding

- ❖ Roy's adaptation model on effectiveness of black cumin water regarding involution of uterus can be prepared and only given to the experimental group among postnatal mothers.

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A Study to Assess the Effectiveness of Pranayama on Stress Among Antenatal Mothers Attending Antenatal Clinic in People's Hospital of Bhopal (M.P.)

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ABSTRACT

Pranayama is the best way to control energy through breathing. It works instantly & relieves stress and boosts energy. Regular pranayama practice is refreshing and balances emotions. Pranayama is scientifically proved tool to reduce the anxiety level and negative emotions.

The aim of the study was to assess the effectiveness of the Pranayama on reducing Stress among antenatal mothers. A total 40 antenatal mothers were studied. The duration of the study was 4 weeks, and change outcomes were measured at the beginning & at the end of the study with help of questionnaire.

Pre-test mean and SD were 62.45 & 11.46 respectively where as post test mean and SD were 32.90 & 7.90, with Chi-value 65.1538 and tabulated value at 0.0001. These reading indicated the effectiveness of Pranayama on Stress among antenatal mothers.

KEY WORDS: Study, effectiveness, pranayama, stress, antenatal mothers, antenatal clinic, hospital

INTRODUCTION:

Indian Statistical Report (2017) stated that (recent Nielsen surveys on stress in 6500 women), that the 87% of Indian women claim feeling stressed most of the time, with an additional 82% asserting that they had insufficient time to relax. The biggest stress is felt among women of 25-55 years of age, who are trying to balance demanding careers with obligation at home. The data indicate the percentage of women claiming to be stressed most of the time. India (87%), Mexico (74%), Russia (69%), Brazil (67%), Spain (66%), France (65%), South Africa (64%), Italy (64), Nigeria (58%), Turkey (56%). According to the data Indian tops the list.^[1]

Stress is the feeling of emotional or physical tension. Stress is the consequence of failure of an human to respond appropriately to emotional or

physical threats.

It is a major health hazard of the modern world affecting all people irrespective of age, gender, education, occupation, domiciliary status, finance, religion, race, ethnicity, and nationality.^[2]

The antenatal period of the baby is a crucial time for neurodevelopment of the body and is thus a period of vulnerability during which a range of symptoms have been found to exert long-term changes on brain development and behavior with implications for physical and psychiatric health.^[3]

OBJECTIVES:

- To assess the pre-existing level of stress among antenatal mothers attending antenatal clinic in selected hospital.
- To find out the effectiveness of pranayama techniques on level of stress among antenatal mothers attending antenatal clinic in selected hospital.
- To assess the post level of stress among antenatal mothers attending antenatal clinic with socio-demographic variables in selected hospital.
- To find out the association between post-test level of stress among antenatal mothers attending

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Table 1: Analysis of Difference Between Pre-Test and Post-Test

	MEAN	SD	Chi-value	df	t - value	Significant
Pre test	62.45	11.46	65.1538	78	4.10	Significant at p value
Post test	32.90	7.90				

antenatal clinic in selected hospital.

- To compare the pre and post level of stress after Pranayama techniques among antenatal mothers attending antenatal clinic in selected hospital.

HYPOTHESIS:

H₀: There will be no significant difference between pre-test and post-test stress level among antenatal mothers attending antenatal clinic in selected hospital.

H₁: There will be significant association between demographic variable and post-test stress level among antenatal mothers attending antenatal clinic in selected hospital.

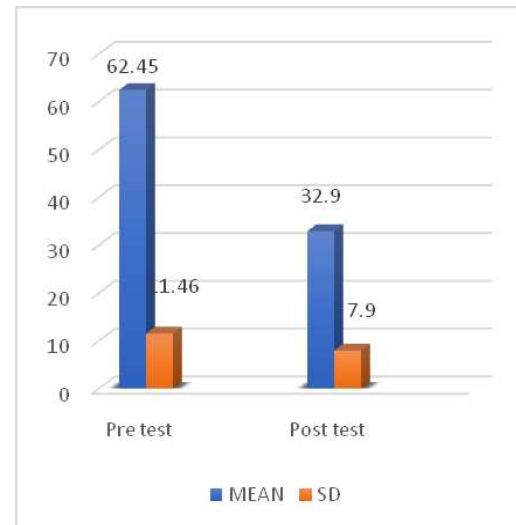
H₂: There will be significant difference between pre-test and post-test stress level among antenatal mothers attending antenatal clinic in selected hospital.

MATERIALS AND METHODS:

In this study an experimental research design and quantitative evaluative approach is used. The sample consisted of 40 antenatal mothers, by using purposive sampling technique. The conceptual framework is used for the study was modified King's attainment theory of goal attainment. Tool used for data collection was self- structure questionnaires, by the investigator related to effects of Pranayama on reducing Stress among antenatal mothers attending antenatal clinic in selected hospital.

RESULTS:

- Majority of samples i.e. (37.5 %) were in between 25-30 years of age, (25%) were in between 31-35 years of age (20%) were in between 36-40 years of age and (17.5%) were in between 41-45 years of age of Pranayama on stress among antenatal mothers attending antenatal clinic in selected hospital.
- Majority of samples i.e. 15(37.5%) were from business and others, 8(20%) were private job and 2(5%) were government job of Pranayama on stress among antenatal mothers attending antenatal clinic in selected hospital.
- Majority of samples i.e. 20(50%) were from field worker, 10 (25%) were from housewife, 5 (12.5%) were from office worker and 5


Figure 1: Difference between Pre-test & post-test

(12.5%) were from others of Pranayama on stress among antenatal mothers attending antenatal clinic in selected hospital.

- Majority of samples i.e. 20 (50%) were having from husband bad habit and 20(50%) were not having from husband bad habit of Pranayama on stress among antenatal mothers attending antenatal clinic in selected hospital.

To provide pranayama for 30 min per day for 30 days among antenatal mothers attending antenatal clinic in selected hospital.

Pranayama was demonstrated to the antenatal mothers and was supervised thereafter, antenatal mothers repeated pranayama everyday for 30 min for 30 days.

The analysis of post-test was significant decrease in level of stress . Post-test mean and SD were 32.90 & 7.90, t-test value 13.4308, df 78, tabulated value 4.10.

The analysis pre-test and post-test significant, chi-value 65.1538 and significant of p value 0.0001.

Table 2 describe that pre-test mean and SD were 62.45 & 11.46 respectively where as post test mean and SD were 32.90 & 7.90, with chi-value 65.1538 and tabulated value at 0.0001. these reading indicate the effectiveness of Pranayama on stress among antenatal mothers.

Table 2: Describe that pre-test mean and SD.

	Mean	SD	Mean Differe nce	Chi value with p value
Pre- test	62.45	11.46	29.55	65.1538
Post-test	32.90	7.90		

CONCLUSION:

The study was done to evaluate the effectiveness of Pranayama on stress among antenatal mothers attending antenatal clinic in People's Hospital, Bhopal. Following conclusion are drawn from the present study findings are :-

- Stress among antenatal mothers decreases after performing Pranayama.
- Pre-test mean and SD were 62.45 & 11.46 respectively whereas post-test mean & SD were 32.90 and 7.90 respectively with t-test value 13.4308, df 78, tabulated value 4.10. These reading indicate that Pranayama is quite affective to deduce stress among antenatal mothers attending antenatal clinic in selected hospital.

NURSING EDUCATION:

Nursing must be encouraged to utilize their knowledge on promotive measure by health education and demonstration in Hospital.

NURSING ADMINISTRATION:

Administrators should take initiative action to update the knowledge of nursing personnel regarding Pranayama to improvement of health and reducing the stress among antenatal mothers by in service education. Nurse administrators can conduct workshop and seminar on Pranayama for reducing stress to all level of nursing personnel in the Hospital.

NURSING RESEARCH:

Evidence based practice helps the nurses to enrich them in knowledge and practice. Nursing researcher should be directed to toward exploring the advantages of Pranayama can be improved. The present study revealed that there the practice of Pranayama should be encouraged in order to decrease the stress among antenatal mothers. The findings of the

present study shall provide a baseline data for research studies to be conducted in future.

LIMITATIONS:

This study will be limited to-

- 40 antenatal mothers attending antenatal clinic in People's hospital, Bhopal.
- Antenatal mothers who can understand English or Hindi.
- Antenatal mothers who are willing to participation in the study.
- To the experience level of the researcher.

RECOMMENDATIONS:

The following studies can be undertaken to strengthen Pranayama as a good remedy for Decrease the stress among antenatal mothers

This study can conduct with larger number of samples.

A study can be conducted with more than 30 days intervention.

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A Study to Assess the Effectiveness of Simulation Technique on Knowledge and Practice Related to Stoma Care Among Staff Nurses Working in Selected Hospital of Bhopal (MP)

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ABSTRACT

Stoma care is a procedure that provides care for stoma patients. The nurse need to have adequate knowledge and practice in stoma care nursing. Simulation technique is very effective tool to increase the knowledge and practice related to stoma care in staff nurses. The purpose of the study was to assess the effectiveness of the Simulation technique to increase knowledge & skill related to Stoma care among staff nurses working in selected hospital. A Quasi-experimental research design and qualitative evaluation approach was used. The sample consisted of 40 staff nurses using a purposive sampling technique. The mean post-test knowledge score of staff nurses was 18.0250 and the standard deviation was 3.07586 and the mean pre-test knowledge score was 7.6250 and the standard deviation was 4.16756. The computed 't' value ('t'=2.02) and the mean post-test practice score of staff nurses was 8.9250 and standard deviation was .99711 and mean pre-test practice score was 4.0750 and the standard deviation was 2.24622. The computed 't' value ('t'= 2.02) was significant at 0.05 level of significance. It is concluded that the marked difference was seen in the mean knowledge and practice score before and after the administration of the simulation, the technique was effective in improving the knowledge and practice level of staff nurses regarding stoma care.

KEY WORDS: Simulation technique, knowledge, practice, stoma care, staff nurses

INTRODUCTION:

In India, there are over 50,000 stoma patients in the county and 350 stoma cases come every year and they are referred from other hospitals. This stoma patient really needs post-operative care they want a good practitioner nurse with good knowledge and practice regarding stoma care^[1].

The Western Australian Ostomy Association states that there are 3 million ostomates in the world. Globally ostomy /stoma care was valued at USD 2.81 billion in 2018 and is projected to reach USD 4.23 billion by 2026, ostomy is gradually becoming a widely accepted procedure like a colostomy, ileostomy, tracheotomy, and urostomy^[2].

In North America state 1,20,000 stoma care procedure are performed every year and people of all age groups has the possibility of the formation of a stoma. The stoma-related complications are 26.5% (20-100) and the highest complications incidence rate in colostomy is approximately 62.6% (20-100) %^[3].

The stoma is surgically created opening for the purpose. The sites includes the esophagus, stomach, duodenum, ileum, colon, pleural cavity, ureters, urinary, bladder, and renal pelvis. The stoma may be temporary or permanent. The surgical procedure that should create an artificial stoma has called Ostomy^[4].

A stoma is a surgically created opening of a body and there are increasing number of cases of stomas, correspondingly the need for specialized nurses for helping patients with a stoma has increased. Stoma nurses have specialized knowledge and skill to render care to patients with stoma^[5].

A stoma nurse must have adequate and good skills in order to provide high-quality care. On the job training & short term courses are help full to develop skill related to stoma care.

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Simulation techniques are used to provide good knowledge and required skill to nurses in order to get desired patient outcomes related to stoma care^[6-7].

OBJECTIVES:

- To assess the knowledge and practice among staff nurses regarding Stoma Care.
- To provide knowledge and enhance skill related to stoma care by simulation technique to the staff nurses in selected clinical setting.
- To assess the knowledge and practice of staff nurses working in related to Stoma Care among selected clinical setting.
- To correlate post test and pre test scores of knowledge & skill related to stoma care among staff nurses of selected clinical setting.

HYPOTHESES:

H₀: There will be no significant difference between the pre-test and the post-test score after the implementation of simulation technique on knowledge and practice related to stoma care among staff nurses working in selected hospital.

H₁: There will be a significant difference between pre-test and post-test scores after the implementation of simulation techniques on knowledge and practice related to stoma care among staff nurses working in selected hospital.

MATERIALS AND METHODS:

A Quasi-experimental research design and quantitative evaluative approach is used. The sample consisted of 40 staff nurses, purposive sampling technique was used and the sampling criteria followed. The Ethical Clearance was taken. The conceptual framework used for the study was Imogene King's theory of goal attainment. The tool used for data collection was self-structured knowledge questionnaires and practice checklists to assess the knowledge and practice, the investigator administered a simulation technique related to knowledge and practice on stoma care among staff nurses working in selected hospital. Independent variables refers to providing simulation techniques related to stoma care among staff nurses and dependent variable refers to knowledge and practice regarding stoma care. A structured questionnaire was developed as the tool and structural/content validity obtained from experts.

The pilot study was conducted before the main study.

DISCUSSION:

Table 1 figure 1 reveals the comparison of the

mean of the pre-test and post-test scores among the staff nurses. The percentage distribution in pre-test was (62.5%) had poor knowledge and in post-test (5.0%) had poor knowledge in staff nurses. In the pre-test were (25.0%) average and in Post-test (7.5%) had average knowledge. In the pre-test (5.0%) had adequate and in post-test (87.5%) had adequate knowledge.

Table 1: Distribution of Knowledge pre-test and post-test score according to frequency and percentage (n=40).

Knowledge	Pre-test		Post-test	
	Frequency	Percent	Frequency	Percent
Poor	25	62.5	2	5.0
Average	10	25.0	3	7.5
Adequate	5	12.5	35	87.5
Total	40	100.0	40	100.0

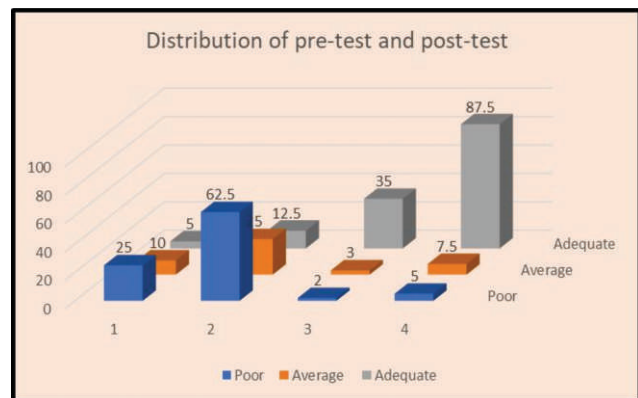


Figure 1: Frequency distribution of the Knowledge pre-test and Post score related to Stoma Care among Nurses.

Table 2: Distribution of Practice pre-test and post-test score (n=40).

Practice	Pre-test		Post-test	
	Frequency	Percent	Frequency	Percent
Poor	22	55.0	0	0.0
Average	14	35.0	4	10.0
Adequate	4	10.0	36	90.0
Total	40	100.0	40	100.0

Table 2 and figure 2 reveals that: Represents the comparison of the mean of the pre-test post-test test scores among the staff nurses. Percentage distribution the in pre-test were (55.0%) had poor practice and in post-test (5%) had poor practice staff nurses. In the pre-test were (35.0%) average and in Post-test (10.0%) had average practice. In pre-test (10.0%) had adequate and

Table 3: Shows the difference between the Knowledge pre-test and post-test mean and standard deviation (N=40).

	Mean	Std. Deviation	Mean difference	t value	df	Tabulated value	Significance
Pre-test	7.63	4.16	10.40	14.09	39	2.02	Significant
Post-test	18.03	3.07		3			at P=0.05

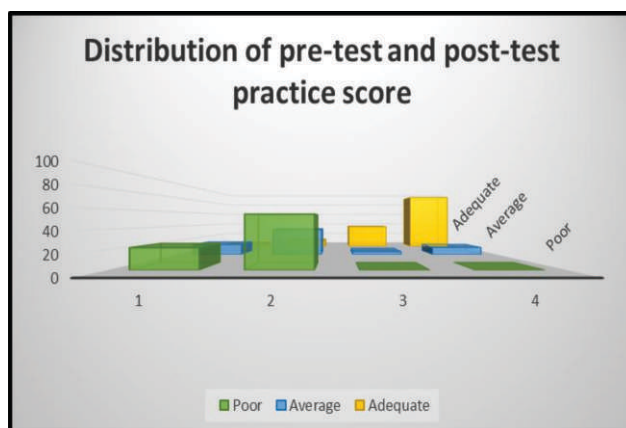
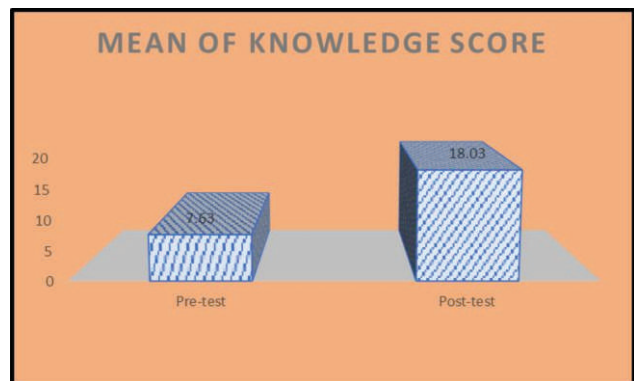
Table 4: Shows the difference between Practice pre-test and post-test mean and standard deviation (N=40).

	Mean	Std. Deviation	Mean Difference	t value	df	Tabulated value	Significance
Pre test	4.08	2.24622	4.85	12.04	39	2.02	Significant at
Post test	8.75	.99711		1			p=0.05

in post-test (90.0%) had adequate practice.

Effectiveness of the Simulation technique on stoma care related to the knowledge and Practice level of Staff Nurses: Table 3 and figure 3 shows that: The overall mean of knowledge regarding stoma care among staff nurses was 7.63 with a standard deviation of 4.16 in the pre-test, and the overall mean of knowledge regarding stoma care among staff nurses in the post-test was 18.03 with the standard deviation of 3.07.

Table 4 and figure 4 shows that: The overall mean of knowledge regarding stoma care among staff nurses was 4.08 it is a standard deviation of 2.24622 in the pre-test, and the overall mean of knowledge regarding stoma care among staff nurses in the post-test was 8.75 with the standard deviation of .99711.

**Figure 2:** Frequency distribution of the Practice pre-test and Post-test score regarding Stoma Care among Nurses.**Figure 3:** The overall mean of knowledge regarding stoma care among staff nurses.**Figure 4:** The overall mean of knowledge regarding stoma care among staff nurses.

Association between Post knowledge and Practice of the Nurses with a selected socio-demographic variable by using chi-square test: Association of socio-demographic data with practice post-test- Association of practice score

regarding stoma care with selected demographic variables such as age, gender, residence, marital status, religion, type of family, qualification, working area, working experience, income, nature of duty, duty shift, length of the duty/hours, previous knowledge regarding stoma care, previously attained stoma care training was analyzed by chi-square test. The Chi-square value of age 2.36383, tabulated value-.0.5004 at 3 degrees of freedom. Chi-square value of gender of nurses 0.233918, tabulated value-0.6286 at 1 degrees of freedom. Chi-square value of Residence, 4.87063, tabulated value 0.08757 at 2 degrees of freedom. Chi-square value of Marital status 2.33918, tabulated value 0.3112 at 2 degrees of freedom. Chi-square value of Religion 1.0582, tabulated value 0.7872, 3 degrees of freedom. The Chi-square value of types of family 0.784314, tabulated value 0.3758 at 1 degrees of freedom. Chi-square value of Qualification of nurses 0.95679, tabulated value- 0.6198 at 2 degree of freedom. Chi-square value of Working area 5.2, tabulated value 0.07427 at 2 degree of freedom. Chi-square value of Working experience 2.54902, tabulated value 0.4665 at 3 degree of freedom. Chi-square value of Income 2.83951, tabulated value 0.2418, 2 degree of freedom. The Chi-square value of Nature of duty 0.89684, tabulated value 0.6386 at 2 degree of freedom. Chi-square value of Duty shift 2.13995, tabulated value 0.1435 at 1 degree of freedom. Chi-square value of length of duty/hour is 0.00, tabulated value 0.00 at 1 degree of freedom. Chi-square value of previous knowledge regarding stoma care 2.14483, tabulated value 0.3422 at 2 degree of freedom. Chi-square value of previous attained stoma care training 4.73458, tabulated value-0.09373 at 2 degree of freedom. These values are non-significant with the socio-demographic variable.

CONCLUSION:

In the pre-test, the maximum number of 55.0% of staff nurses having poor practice regarding stoma care, 35.0% staff nurses having average practice regarding stoma care and 10.0% staff nurses having adequate practice regarding stoma care and in the post-test 90.0% of staff nurses having adequate practice regarding stoma care, 10.0% of staff nurses having average practice regarding stoma care and 0.0% of staff nurses having poor practice regarding stoma care. to the conclusion that simulation technique is effective in increasing knowledge and practice among staff nurses regarding stoma care. Hence much needs to be done in the area of hospitals and involvement of staff nurses in

this. Also emphasis on need to increasing knowledge and practice among staff nurses through simulation technique.

NURSING IMPLICATION:

In today's nursing world or health care delivery system the role and participation of nurses have changed. The findings of the study have implications in different branches of nursing that is in nursing practice, nursing education, nursing administration and nursing research, by assessing a level of staff nurse knowledge and practice regarding stoma care.

NURSING PRACTICE:

Nurse are in the best position to give information regarding various aspects of stoma care, to the patient will be free to reveal their problems to nurses. Stoma care program should organize to improve the knowledge and practice of nursing staff regarding stoma care. Nurse like other health care professionals are under increased scrutiny to provide safe and effective care.

NURSING EDUCATION:

Nursing education is developing rapidly in India and nurse from our country can be found all over the world providing care and education. The present study has implication on nursing education.

The findings of the study indicated that more emphasis should be placed in the nursing curriculum on Stoma care. Simulation technique programmes should be arranged for nurses which would be a great help for promoting themselves as well as other who are in need, this knowledge can help nurses to know about the Stoma Care with this knowledge they can explain to stoma care to the patient and. So the nurse educator must be educated knowledge regarding Stoma Care and its strategies in order to impart the knowledge and practice. Nurse educators should provide opportunities to gain knowledge and practice regarding Stoma Care.

NURSING ADMINISTRATION:

The present study reveals that there is a need to improve the knowledge and practice regarding stoma care among nursing staff, with advanced technology and ever-growing challenges of health care needs. The college and hospital administration, have a responsibility to provide nurses, nurse educators and nursing staff with continuing education on stoma care. This will enable them to update their knowledge and practice skills.

The study finding will help the administrator to arrange continuing education programme for nurses knowledge and practice regarding stoma care. It helps to prepare adequate learning material for giving health education.

NURSING RESEARCH:

The present study revealed that there is a need to improve the knowledge and practice regarding stoma care among staff nurses. The findings of the present study shall provide a baseline data for research studies to be conducted in future.

Research studies can be conducted to identify the attitude and practices towards knowledge regarding stoma care among staff nurses.

Research can be carried out to seek the effectiveness of simulation technique on knowledge and practice regarding stoma care.

LIMITATION:

Study sample is limited to 40 students. The study is limited only to staff nurses of People's Hospital in Bhopal. The present study is limited to only one group; no control group adopted for the study.

The structured knowledge and practice questionnaire and simulation technique was developed. Limited time was available for the study.

RECOMMENDATIONS:

Based on the research findings the following recommendations can be made:

The same study can be replicated on a larger sample and also at different settings for generalization of findings.

A simulation technique on knowledge and practice regarding stoma care can be prepared and given to the staff nurses, so that they can impart knowledge and practice to all people.

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Articles

Medical Sciences

- Surgical Menopause: Are we Pushing Women Towards the Menace of Accelerated Aging and Diseases?**
Ruchi Karla01
- Pregnancy with Osteogenesis Imperfecta - Rare Case Report**
Shagun Bhatia, Manisha Jain, Shikha Sonker, Divya Khare06

Dental Sciences

- Oral Health Status Among Coal Mine Workers in Madhya Pradesh, India- A Cross-sectional Study**
Nitin Tomar, Swapnil Jain, Vijayta Shrivastava, Survarna Gargav, Sonesh Shashikant Sharma.....08
- Cemento-Ossifying Fibroma – A Massive Lesion in Mandible-A Case Report**
Sadiya Tarannum, Pooja Khare, GV Ramachandra Reddy, Swati Surushe, Shubhi Maheshwari.....15

Nursing Sciences

- A Comparative Study to Assess the Effectiveness of Iron Folic Acid Tablets Supplementation During Menstruation Among the Adolescent Girls Studying in Selected Colleges (MP)**
Rekha R Gupta19
- A Quasi Experimental Study to Assess the Effectiveness of Black Cumin Water on Involution of Uterus Among Postnatal Mothers in People's Hospital Bhopal (MP)**
Pooja Meena, Nitika Bhargav , Rekha R Gupta.....22
- A Study to Assess the Effectiveness of Pranayama on Stress Among Antenatal Mothers Attending Antenatal Clinic in People's Hospital of Bhopal (MP)**
Anshu Priya, Nitika Bhargav , Rekha R Gupta.....27
- A Study to Assess the Effectiveness of Simulation Technique on Knowledge and Practice Related to Stoma Care Among Staff Nurses Working in Selected Hospital of Bhopal (MP)**
Megha Joshi, Babita Agrawal, Rekha R Gupta.....30